

ABSTRACT OF THE DISCLOSURE

The orientation of a crystalline semiconductor film obtained by crystallizing an amorphous semiconductor film is improved and a TFT formed from this crystalline semiconductor film is provided. In a semiconductor device whose TFT is formed from a semiconductor layer mainly containing silicon, the semiconductor layer has a channel formation region and an impurity region doped with an impurity of one type of conductivity. 20% or more of the channel formation region is the {101} lattice plane that forms an angle of equal to or less than 10 degree with respect to the surface of the crystalline semiconductor film, the plane being detected by an electron backscatter diffraction pattern method, 3% or less of the channel formation region is the {001} lattice plane that forms an angle of equal to or less than 10 degree with respect to the surface of the crystalline semiconductor film, 5% or less of the channel formation region is the {111} lattice plane that forms an angle of equal to or less than 10 degree with respect to the surface of the crystalline semiconductor film.